

EXPLANATION OF PLATE.

Antenna, front and palpus of:

1. *Dicladocera sexfasciata*, n. sp.
2. *Tabanus coarctatus*, n. sp.
3. " *lacustris*, n. sp.
4. " *mularis*, n. sp.
5. " *arborealis*, n. sp.
6. " *gladiator*, n. sp.

SYNONYMICAL NOTES ON *ECPHYLUS* FOERSTER, WITH
DESCRIPTION OF ONE NEW SPECIES (HYM.,
BRACONIDAE).

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The new parasitic species described in this paper was reared in connection with certain economic studies on wood-infesting Coleoptera. In order to explain my allocation of this species to the genus *Ecphylus* it becomes necessary to discuss briefly some new synonymy.

ECPHYLUS Foerster.

Ecphylus Foerster, Verh. naturh. Ver. preuss. Rheinl., vol. 19, 1862, p. 237.

Genotype, *Bracon silesiacus* Ratzeburg.

Sactopus Ashmead, Proc. U. S. Nat. Mus., vol. 23, 1900, pp. 146, 147. Genotype, *Sactopus schwarzii* Ashmead. (New synonymy.)

Sycosoter Picard and Lichtenstein, Bul. Soc. Ent. France, 1917, no. 16, p. 285.

Genotype, *Sycosoter lavagnei* Picard and Lichtenstein. (New synonymy.)

Sactopus schwarzii was described only as it was characterized in Ashmead's key to the genera of Pambolini. The apterous male with its conspicuously thickened posterior metatarsi induced the author to propose a new generic name for the species. I have been unable, however, to find any basis whatever for separating the winged female of *S. schwarzii* from *Ecphylus* as typified by *E. silesiacus* (Ratz.) and I do not believe the thickened metatarsus and the apterous condition of the male constitute sufficient grounds for generic distinction. I have, therefore, suppressed *Sactopus*. In the genus *Paraecphylus* Ashmead, which differs from *Ecphylus* only in having the first cubital and first discoidal cells confluent, males of certain species likewise have swollen posterior metatarsi exactly similar to those of *Sactopus*. That this character is not correlated with the loss of wings is evident from specimens of an unnamed species of *Paraecphylus* in the National Collection, in which the males are fully winged but still have the enlarged metatarsi.

In describing *Sycosoter*, Picard and Lichtenstein appreciated the close similarity of the species before them, which they called *lavagnei*, with typical *Ecphylus*, but the occurrence of winged and wingless forms of both sexes influenced them to propose a new generic name for the species. I have seen specimens of *S. lavagnei* from southern France and in my opinion *Sycosoter* is not tenable as a distinct genus.

***Ecphylus schwarzii* (Ashmead) (New combination).**

Sactopus schwarzii Ashmead, Proc. U. S. Nat. Mus., vol. 23, 1900, p. 146.

Ecphylus johnsoni Rohwer, Proc. U. S. Nat. Mus., vol. 45, 1913, p. 549. (New synonymy.)

In the collection of the U. S. National Museum there are two male and two female specimens labeled "Anglesea, N. J., 24.7, Collection Ashmead," and bearing the name label "*Sactopus schwarzii* Ashm." in Ashmead's handwriting. Undoubtedly these specimens comprised his type material. *Ecphylus johnsoni* was described from a single female, from Pennsylvania, which is likewise in the National Collection. It appears to agree exactly with the winged female of *Sactopus schwarzii*.

The following descriptive notes taken from Ashmead's specimens of *schwarzii* are given here to supplement the very brief original characterization.

Male.—Length 1.4 mm. Head quadrate; eyes very small, their shortest diameter only about half the width of temples; vertex strongly convex; frons smooth; ocelli very minute; occiput completely, sharply margined; antennae very slender, shorter than the body, 12-segmented; temples bulging slightly beyond outer margins of eyes. Thorax narrower than head; notauli weak, obliterated behind; propodeum faintly sculptured with a poorly defined carina on basal half; all femora somewhat swollen; posterior metatarsus inflated and fully as long as remaining tarsal segments combined; wings entirely wanting, not even represented by short pads. Abdomen longer and slightly broader than thorax; first tergite small, scarcely as long as broad at apex, longitudinally striate and with two posteriorly convergent keels medially; remainder of dorsum of abdomen polished.

Yellowish brown; apical half of antennae and posterior tibiae dark brown; posterior metatarsus blackish.

Female.—Differs from the male as follows: Length 1.6 mm. Head subquadrate; eyes small but somewhat longer than in male, distinctly narrower than temples; ocelli larger; postocellar line less than twice diameter of an ocellus; thorax about as wide as head; wings fully developed; stigma narrow, emitting radius from about its middle; radius composed of two abscissae, the first perpendicular to wing margin and longer than width of stigma, the second weakly curved and going to extreme apex of wing; recurrent entering first cubital cell; intercubitus very short, almost on a line with second abscissa of cubitus, the point of union with the latter indefinite; cubitus obliterated beyond

intercubitus, second cubital cell therefore confluent with second discoidal; medius and submedius curved; submedian cell very narrow and confluent with first brachial, the nervulus absent; first discoidal cell long-petiolate; recurrent vein entering first cubital cell; radiella and nervellus obliterated; legs more slender than in male although femora are slightly thickened; posterior metatarsus not conspicuously thickened; ovipositor sheath about as long as abdomen beyond first segment; propodeum and first abdominal tergite somewhat paler than remainder of body; posterior tarsi uniformly yellowish brown, the metatarsus not darker than remaining segments; anterior wing slightly dusky across first abscissa of radius.

In addition to the types of *schwarzii* and *johnsoni*, the National Collection contains a series of specimens reared at Asheville, North Carolina, from *Dendroctonus frontalis* Zimmermann and *Pityophthorus* sp. In addition to the wingless male and winged female forms, this series includes wingless females. These differ otherwise from the normal winged individuals only in the slightly more cubical head and the smaller eyes and ocelli.

***Ecphylus rohweri*, new name.**

Ecphylus schwarzii Rohwer, Proc. U. S. Nat. Mus., vol. 45, 1913, p. 538, not *schwarzii* (Ashmead), 1900.

The transfer of *Sactopus schwarzii* Ashmead to *Ecphylus* makes necessary the suppression of *schwarzii* Rohwer as a homonym.

***Ecphylus arcuatus*, new species.**

In the virtually apterous male this species most closely resembles *schwarzii* (Ashmead). It is easily distinguished from that species, however, by its much larger size, complete and coarsely foveolate notauli, strongly curved second abscissa of radius, more conspicuous infuscation along the veins in the middle part of the anterior wing, strongly aciculate frons, longer antennae and ovipositor sheath, and the presence of distinct wing pads in the male.

Female.—Length 3 mm. Head subquadrate, not wider than thorax; eyes small, scarcely as long as face from antennae to base of clypeus; temples and cheeks broader than the eyes, convex, smooth, face nearly twice as broad as long, convex, weakly transversely sculptured; malar space longer than extreme width of eye; anterior margin of clypeus with a fringe of long hairs; antennae very slender, about as long as body, 20-segmented; first flagellar segment slightly shorter than second, which is five times as long as thick; apical flagellar segments nearly three times as long as thick; frons closely transversely aciculate; ocelli very small, postocellar line nearly twice diameter of an ocellus but less than half as long as ocellular line; occipital carina strong.

Thorax rather stout; mesoscutum descending abruptly in front; notauli broad, strongly impressed, and coarsely foveolate except posteriorly where they are much narrower; middle lobe of mesoscutum somewhat angulated anteriorly at each side, very finely punctate medially and with a median longitudinal groove which is deepest posteriorly; area behind middle lobe and between posterior ends of notauli rugose; lateral lobes nearly smooth; scutellar furrow broad, finely foveolate; scutellum smooth, shallowly impressed down middle, margined laterally by low carinae; propodeum convex, entirely rugose, most coarsely so posteriorly; propodeal spiracles minute, circular; side of pronotum smooth, its broad longitudinal furrow crossed by many evenly spaced raised lines; prepectus margined; mesopleurum polished; mesopleural furrow narrow, smooth; legs slender; posterior tibia with only one calcarium and that very short; posterior metatarsus longer than the four remaining tarsal segments combined; wings uniformly closely hairy; stigma narrow, emitting radius from slightly beyond its middle; radius composed of two abscissae, the first only slightly oblique and about as long as first intercubitus, the second strongly curved and attaining wing margin slightly before extreme apex of wing; first cubital cell a little longer than first discoidal; the confluent second and third cubital cells narrowing slightly to near middle and then broadening strongly to apex; cubitus beyond intercubitus very weak and mostly unpigmented; the section of cubitus between recurrent and intercubitus nearly on a line with intercubitus; petiole of first discoidal cell as long as recurrent vein; medius and submedius parallel, curved; submedian cell very narrow and confluent with first brachial, the nervulus wanting; subdiscoideus exactly interstitial with discoideus; radiella and nervellus wanting; cubitella well developed.

Abdomen stout, fully as long as head and thorax combined, broadly sessile; first tergite hardly as long as broad at apex, broadly elevated medially on basal half, entirely longitudinally striate and sharply carinate laterally; remainder of abdomen polished, the lateral margins of dorsum rounded, not at all carinate; second suture effaced; hypopygium not nearly attaining apex of abdomen; ovipositor sheath a little longer than abdomen.

Brownish black; face and cheeks darker than remainder of head; antennae yellowish brown basally; legs dark brown, extreme bases of tibiae pale; wings subhyaline; a broad brownish streak covering first abscissa of radius, also slight infuscation along the other veins in middle of wing.

Male.—Apterous, wings represented merely by short scale-like pads that extend slightly beyond base of propodeum; temples and cheeks bulging a little beyond the eyes and much wider than eyes; antennae of allotype 18-segmented; all femora somewhat swollen; posterior metatarsus conspicuously thickened and relatively even longer than in female; otherwise essentially as in the female.

Type locality.—Crater Lake, Oreg.

Type.—No. 50675, U. S. N. M.

Three females and four males reared by W. J. Buckhorn, June 16, 1931, under Bureau of Entomology Hopkins No. 18950-d from an unknown host in *Tsuga mertensiana*. In the paratypes the number of antennal segments ranges from 18 to 21.